



# **John Deere Specific HD UTV Straight Blade & V-Plow Installation Instructions**

## **Blade Models:**

**72" IMPACT Straight Blade Assembly #87540**

**72" IMPACT V-Plow Assembly #87545**

## **Vehicle Model:**

**XUV835/865 Winch Harness Integration      2017—\_\_**

### **⚠ CAUTION**

Read this document before installing the snowplow.

### **⚠ CAUTION**

See your WESTERN® outlet/website for specific vehicle application recommendations before installation. The Quick Match selection system has specific vehicle and snowplow requirements.

# SAFETY

## SAFETY DEFINITIONS

### ⚠ WARNING

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

### ⚠ CAUTION

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

## WARNING/CAUTION AND INSTRUCTION LABELS FOR UTV STRAIGHT BLADE

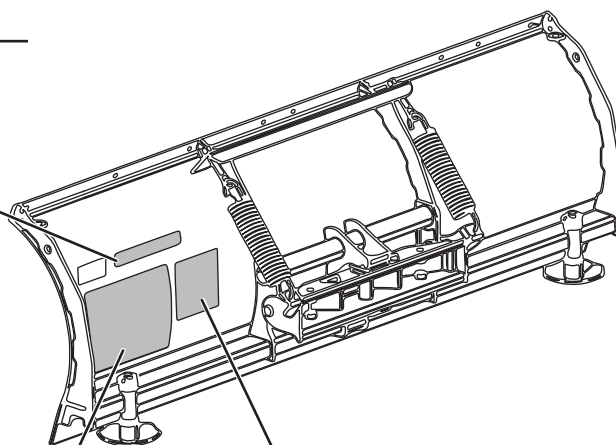
Become familiar with and inform users about the warning/caution and instruction labels on the back of the blade.

**NOTE:** If labels are missing or cannot be read, see your sales outlet.

### Serial Number Label



Serial No. Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
LL	2-Digit Location Code
XXXX	4-Digit Sequential Number
ZZZZZZ	5- to 7-Digit Blade Assembly PN



### Instruction Label

#### ATTACH

- Slowly drive vehicle forward to engage rear receiver pins into headgear slots. Apply vehicle parking brake.
- Hold down lock lever and move hitch pin handle out of the handle lock notch, allowing spring to move the hitch pin handle forward.
- Plug in electrical harness.
- Turn plow control in vehicle ON and activate FLOAT.
- Stand in front of blade. Push top of headgear toward vehicle to allow hitch pins to fully engage hitch pin holes.
- Verify the lock pin is engaged in the forward hole in the lock pin bracket.
- Remove hairpin, adjustment pin, & stand.

#### DETACH

- With blade straight, lower snowplow to the ground. Activate FLOAT, then turn plow control in vehicle OFF. Apply vehicle parking brake.
- Unplug electrical harness.
- Insert stand through slot in the passenger side headgear horn. Adjust stand as far down as possible, install adjustment pin, and secure with a hairpin.
- Hold down lock lever to disengage the lock pin and move the hitch pin handle rearward to fully disengage hitch pins from receivers.
- Move hitch pin handle into handle lock notch.

#### ⚠ WARNING

Keep fingers away from snowplow and UTV attachment points.

##### ATTACH – Steps 2, 6, & 7 DETACH – Step 3

##### DETACH – Steps 4 & 5

US patents 7,400,058; 7,737,576; 9,200,418.  
Read Owner's Manual for complete instructions.

### Warning and Caution Label

#### ⚠ WARNING

Blade could drop unexpectedly, crushing or trapping limbs. Lower blade when vehicle is parked.

Overloading could negatively affect vehicle handling. To avoid serious injury or death, do not exceed GVWR or GAWR including blade and ballast.

#### ⚠ CAUTION

Read Owner's Manual before operating or servicing snowplow.

Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.

Plowing speed should not exceed 10 mph (16 km/h).

See your sales outlet/website for specific vehicle application recommendations.

# SAFETY

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## WARNING/CAUTION AND INSTRUCTION LABELS FOR HD UTV V-PLOW

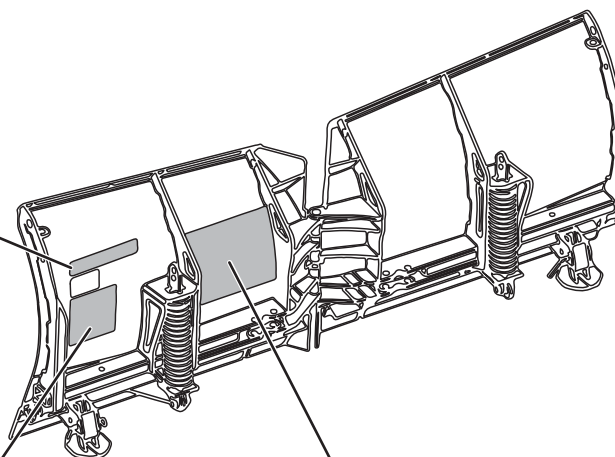
Become familiar with and inform users about the warning/caution and instruction labels on the back of the blade.

**NOTE:** If labels are missing or cannot be read, see your sales outlet.

Serial Number Label

ZZZZZ
YYMMDDLLXXXXZZZZZ

Serial No. Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
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ZZZZZZ	5- to 7-Digit Blade Assembly PN



Instruction Label

### ATTACH

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- Hold down lock lever and move hitch pin handle out of the handle lock notch, allowing spring to move the hitch pin handle forward.
- Plug in electrical harness.
- Turn plow control in vehicle ON and activate FLOAT.
- Stand in front of blade. Push top of headgear toward vehicle to allow hitch pins to fully engage hitch pin holes.
- Verify the lock pin is engaged in the forward hole in the lock pin bracket.
- Remove hairpin, adjustment pin, & stand.

### DETACH

- With blade straight, lower snowplow to the ground. Activate FLOAT, then turn plow control in vehicle OFF. Apply vehicle parking brake.
- Unplug electrical harness.
- Insert stand through slot in the passenger side headgear horn. Adjust stand as far down as possible, install adjustment pin, and secure with a hairpin.
- Hold down lock lever to disengage the lock pin and move the hitch pin handle rearward to fully disengage hitch pins from receivers.
- Move hitch pin handle into handle lock notch.

### ⚠ WARNING

Keep fingers away from snowplow and UTV attachment points.

#### ATTACH – Steps 2, 6, & 7

#### DETACH – Step 3

#### DETACH – Steps 4 & 5

US patents 7,400,058; 7,737,576; 9,200,418.  
Read Owner's Manual for complete instructions.

Warning and Caution Label

### ⚠ WARNING

Blade could drop unexpectedly, crushing or trapping limbs. Lower blade when vehicle is parked.

Overloading could negatively affect vehicle handling. To avoid serious injury or death, do not exceed GVWR or GAWR including blade and ballast.

### ⚠ CAUTION

Read Owner's Manual before operating or servicing snowplow.

Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.

Plowing speed should not exceed 10 mph (16 km/h).

See your sales outlet/website for specific vehicle application recommendations.

www.

# SAFETY

## SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating, or making adjustments.

### WARNING

Lower the blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.

### WARNING

The driver shall keep bystanders clear of the blade when it is being raised, lowered, or angled. Do not stand between vehicle and blade or within 8 feet of a moving blade. A moving or falling blade could cause personal injury.

### WARNING

Keep hands and feet clear of the blade and A-frame/T-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.

### WARNING

Do not exceed GVWR or GAWR including blade and ballast.

### WARNING

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

### WARNING

Remove blade assembly before placing vehicle on hoist.

### CAUTION

Assembling a hose to the incorrect wing ram port can result in permanent damage to the ram.

### CAUTION

Refer to the current Quick Match selection system for minimum vehicle recommendations and ballast requirements.

## HYDRAULIC SAFETY

### WARNING

Hydraulic fluid under pressure can cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.

- Always inspect hydraulic components and hoses before using. Replace any damaged or worn parts immediately.
- If you suspect a hose leak, DO NOT use your hand to locate it. Use a piece of cardboard or wood.

## FUSES

The WESTERN® electrical and hydraulic systems contain several blade-style automotive fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire. Fuse Replacement, including fuse ratings and locations, is located in the Maintenance section of the Owner's Manual.

## PERSONAL SAFETY

- Remove ignition key and put the vehicle in PARK or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or snowplow.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt, and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses, and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

# SAFETY

## FIRE AND EXPLOSION

### ⚠ WARNING

Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

## CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate mobile communication equipment such as cell phones, text messaging devices, pagers, or two-way radios.

## VENTILATION

### ⚠ WARNING

Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.

## BATTERY SAFETY

### ⚠ CAUTION

Batteries normally produce explosive gases, which can cause personal injury. Therefore, do not allow flames, sparks, or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.

- Batteries contain sulfuric acid, which burns skin, eyes, and clothing.
- Disconnect the battery before removing or replacing any electrical components.

## NOISE

Airborne noise emission during use is below 70 dB(A) for the snowplow operator.









## VIBRATION

Operating snowplow vibration does not exceed 2.5 m/s<sup>2</sup> to the hand-arm or 0.5 m/s<sup>2</sup> to the whole body.

## TORQUE CHART

### ⚠ CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to torque chart. Use standard methods and practices when attaching snowplow, including proper personal protective safety equipment.

Recommended Fastener Torque Chart					
Inch Fasteners Grade 5 and Grade 8					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Grade 5	 Grade 8		 Grade 5	 Grade 8
1/4-20	8.4	11.9	9/16-12	109	154
1/4-28	9.7	13.7	9/16-18	121	171
5/16-18	17.4	24.6	5/8-11	150	212
5/16-24	19.2	27.3	5/8-18	170	240
3/8-16	30.8	43.6	3/4-10	269	376
3/8-24	35.0	49.4	3/4-16	297	420
7/16-14	49.4	69.8	7/8-9	429	606
7/16-20	55.2	77.9	7/8-14	474	669
1/2-13	75.3	106.4	1-8	644	909
1/2-20	85.0	120.0	1-12	704	995
Metric Fasteners Class 8.8 and 10.9					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Class 8.8	 Class 10.9		 Class 8.8	 Class 10.9
M6 x 1.00	7.7	11.1	M20 x 2.50	325	450
M8 x 1.25	19.5	26.9	M22 x 2.50	428	613
M10 x 1.50	38.5	53.3	M24 x 3.00	562	778
M12 x 1.75	67	93	M27 x 3.00	796	1139
M14 x 2.00	107	148	M30 x 3.50	1117	1545
M16 x 2.00	167	231	M33 x 3.50	1468	2101
M18 x 2.50	222	318	M36 x 4.00	1952	2701
These torque values apply to fasteners except those noted in the instructions.					

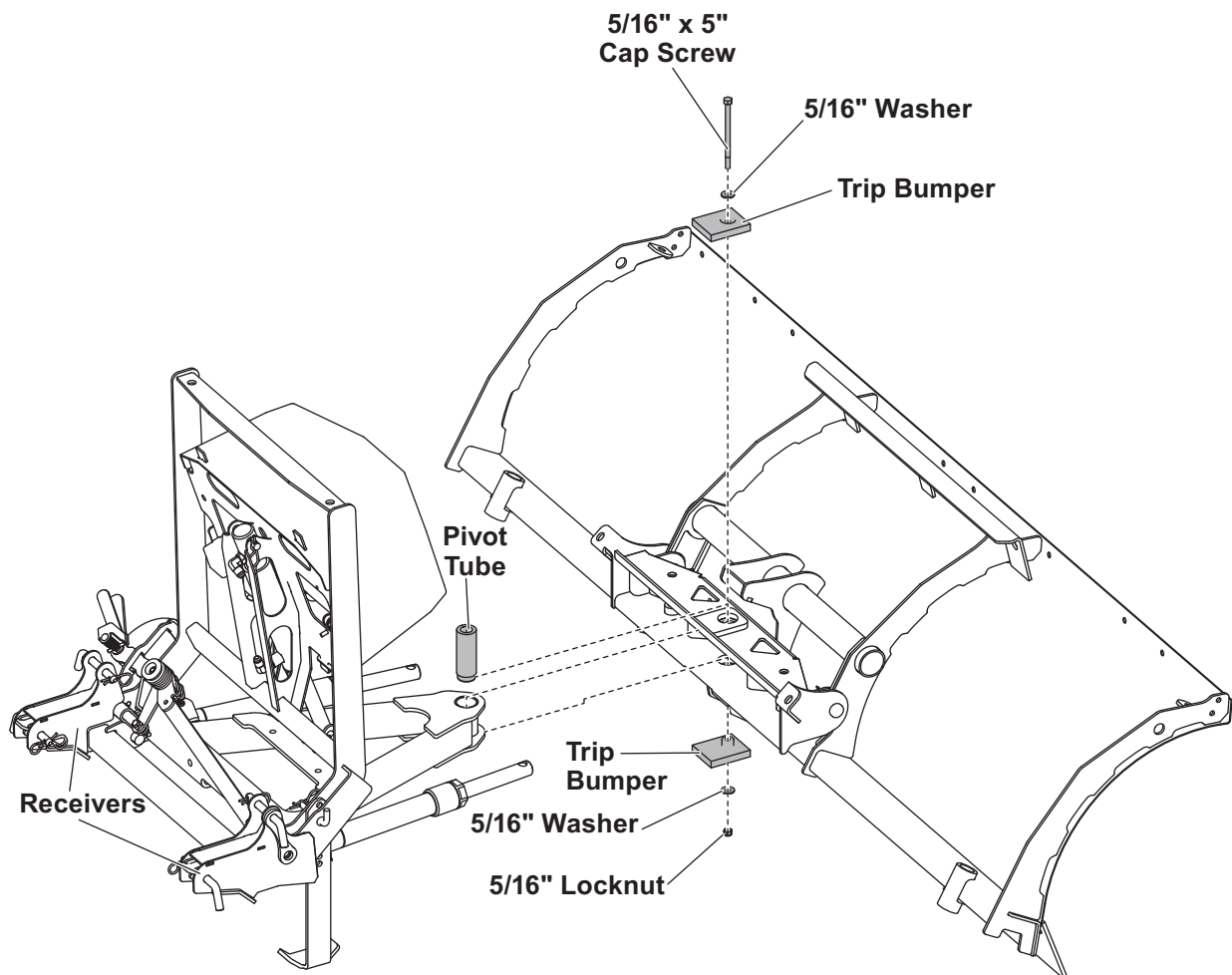
# INSTALLATION INSTRUCTIONS – STRAIGHT BLADE

## UNPACKING – STRAIGHT BLADE

1. Set aside the blade guides and parts bag. The vehicle electrical harnesses are located in the mount box. The Owner's Manual is located in the blade box.
2. Remove the receivers by moving the handle back toward the receivers, disengaging the hitch pins. Remove and set aside.
3. Remove the cable ties that hold the assembly to the pallet.
4. Remove the fasteners and strapping that secures the A-frame to the pallet.

## A-FRAME TO BLADE ASSEMBLY

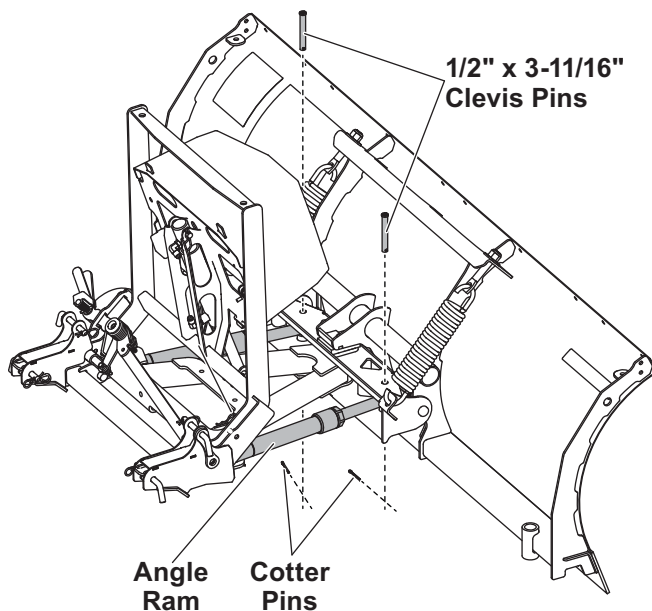
1. Insert the nose of the A-frame into the quadrant and align the pivot tube on the A-frame with the pivot tube holes on the quadrant. Loosen and remove both trip springs and tip the blade forward. Insert the pivot tube through the quadrant and into the A-frame, tapered end first.
2. Install a trip bumper to each end of the pivot tube and under the blade stop as shown below. The round boss on the bumper will fit into the pivot tube, and the long bumper leg will butt up against the upward bend of the quadrant.



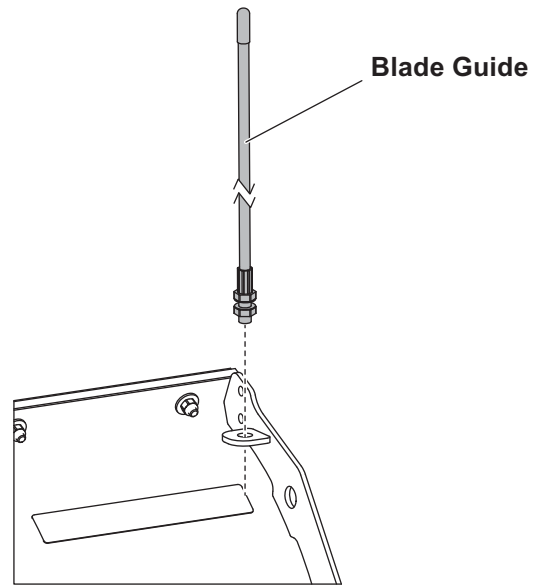


## INSTALLATION INSTRUCTIONS – STRAIGHT BLADE

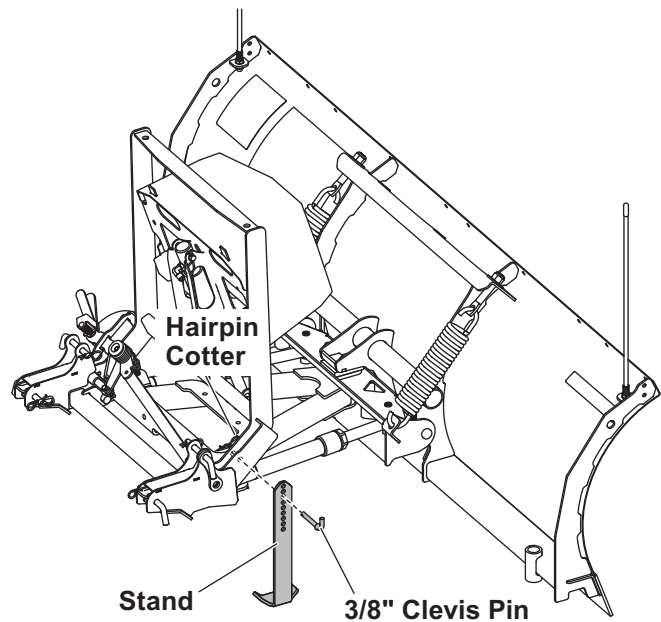
3. Place a 5/16" flat washer on a 5/16" x 5" cap screw, and slide the cap screw from the top down through the bumpers. Attach a 5/16" flat washer and a 5/16" locknut to the cap screw, and tighten until the rubber on the bumpers begins to dimple.
4. Move the snowplow into a normal operating position.
5. Reinstall the trip springs.
6. Adjust the trip springs by tightening the top nuts until the coils of the springs begin to separate (a piece of paper such as this instruction sheet should pass between the second and third coils).
7. Remove the protective packaging from the angle rams.
8. Align the holes in the rod end of the angle ram with the corresponding holes on the back of the quadrant.
9. Install a 1/2" x 3-11/16" clevis pin from the top down to attach each rod. Secure the clevis pins with cotter pins from the parts bag.



10. Install the blade guides.



11. With the A-frame parallel to the ground, secure the stand with a 3/8" clevis pin and hairpin cotter.



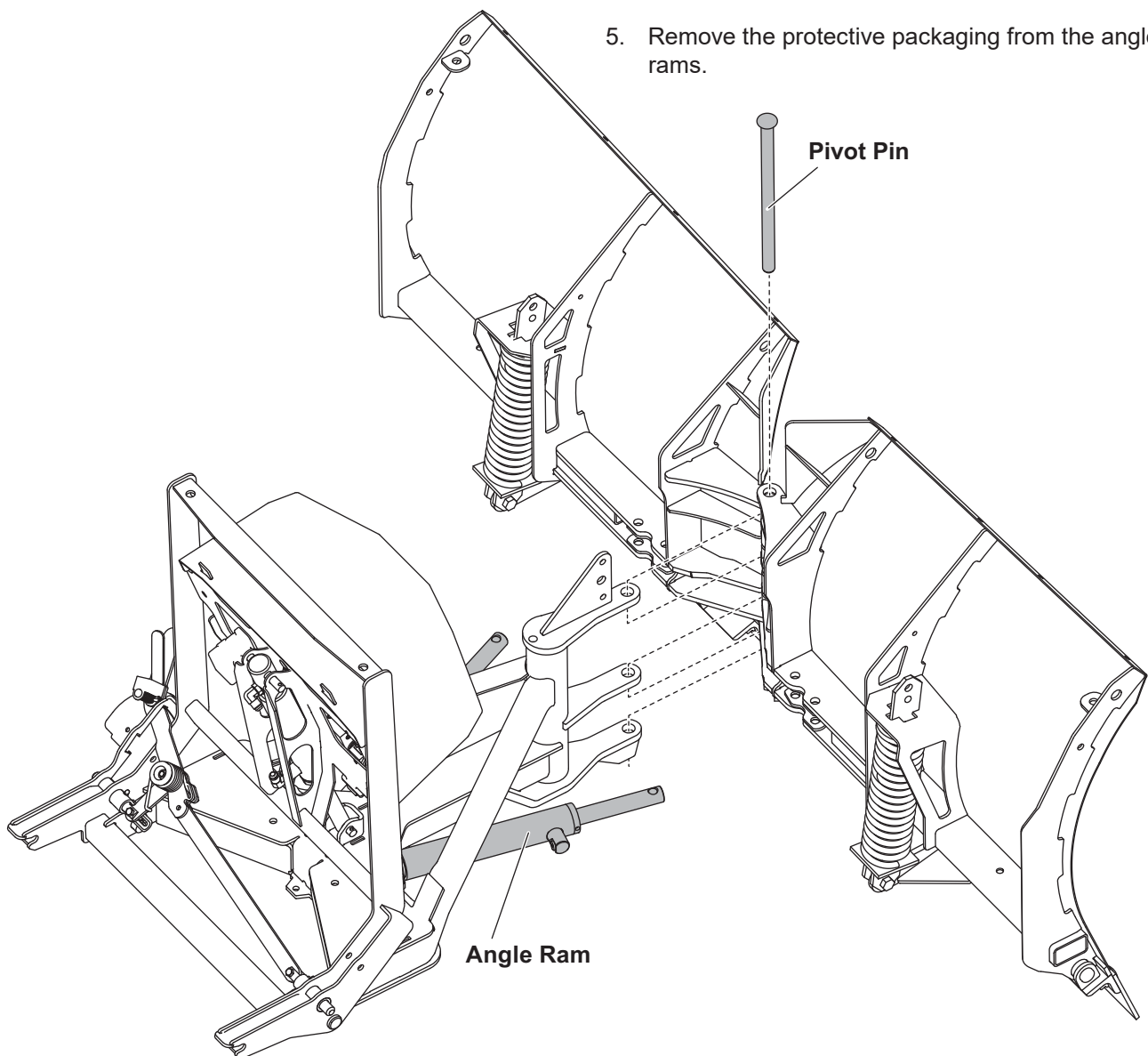
# INSTALLATION INSTRUCTIONS – V-PLOW

## UNPACKING – V-PLOW

1. Set aside the blade guides and parts bag. The vehicle electrical harnesses are located in the mount box. The Owner's Manual is located in the blade box. Remove the receivers by moving the handle back toward the receivers, disengaging the hitch pins. Remove and set aside.
2. Remove the cable ties that are holding the assembly to the pallet.
3. Remove the fasteners and strapping that secures the T-frame to the pallet.

## T-FRAME TO BLADE ASSEMBLY

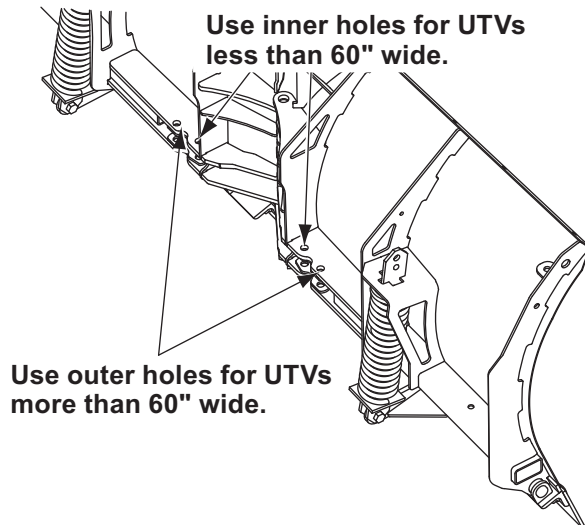
1. Remove the blade wings from the crate. Remove the four shipping straps, then replace the cutting edge hardware.
2. Align the hinges of each wing. Position the T-frame assembly between the blade wings so that the holes in the T-frame are aligned with the holes in wing hinges.
3. Insert the pivot pin from top to bottom through all hinges as shown below.
4. Move the snowplow into a normal operating position.
5. Remove the protective packaging from the angle rams.



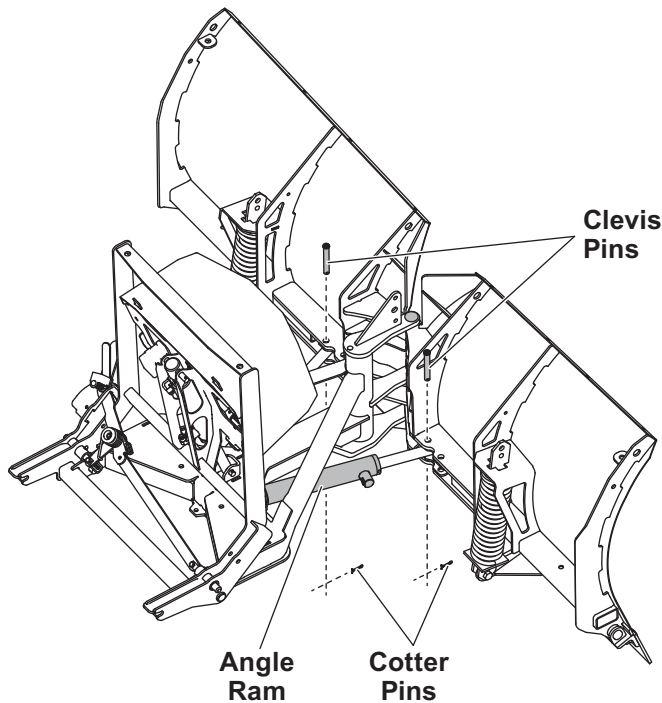


## INSTALLATION INSTRUCTIONS – V-PLOW

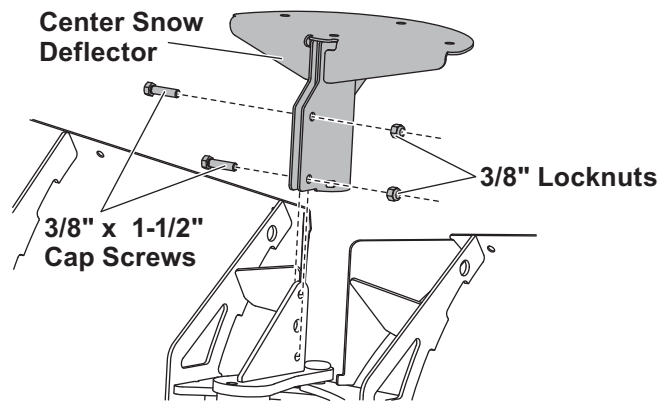
6. Determine whether to use the inside or outside angle ram holes, depending on the width of the UTV. If the UTV width exceeds 60", attach the angle rams to the outer blade holes. The snowplow width is to be equal to or greater than the width of the UTV. Align the holes in the rod end of the angle ram with the corresponding holes on the back of the blade.



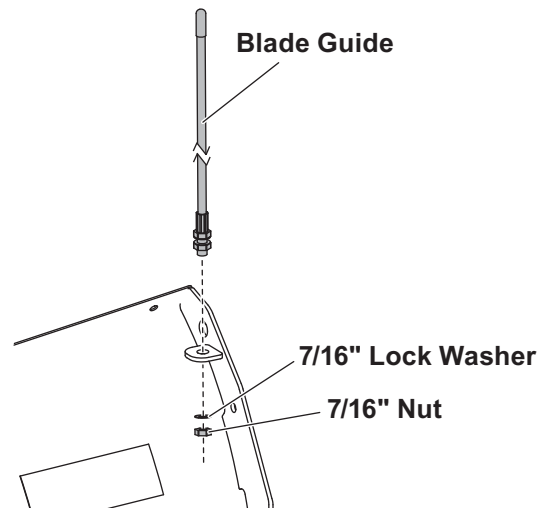
7. Connect each angle ram to the blade with a 1/2" x 2-7/8" clevis pin installed from the top down. Secure with 5/32" x 1-1/2" cotter pins.



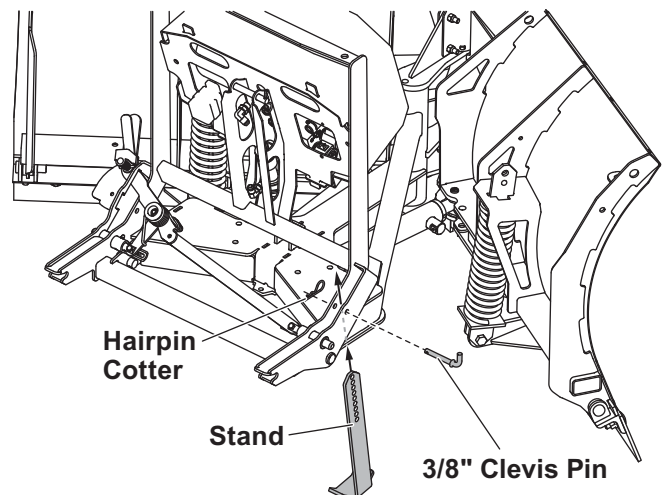
8. Install the center snow deflector using two 3/8" x 1-1/2" cap screws and 3/8" locknuts.



9. Install the blade guides using a 7/16" lock washer and 7/16" nut for each guide.



10. With the T-frame parallel to the ground, secure the stand with a 3/8" clevis pin and hairpin cotter.



# INSTALLATION INSTRUCTIONS

## HYDRAULIC UNIT

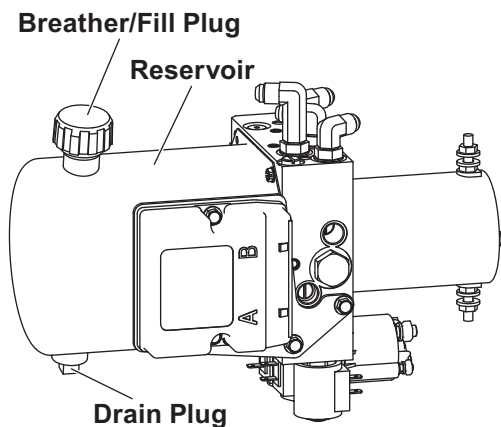
### ⚠ WARNING

Keep 8' clear of the blade when it is being raised, lowered, or angled. Do not stand between vehicle and blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

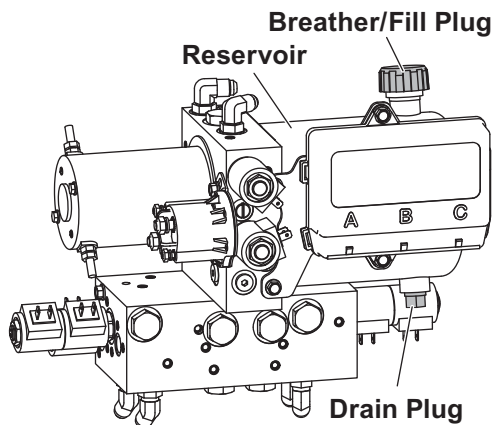
The hydraulic system comes from the factory preassembled, partially filled, and fully tested.

1. Attach the snowplow to the vehicle according to the instructions on the back of the blade.
2. Remove the cover from the hydraulic unit. Remove and discard the factory-installed pipe plug from the top of the reservoir and install the breather.

### Straight Blade Hydraulic Unit



### V-Plow Hydraulic Unit



### ⚠ WARNING

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

3. Turn the control ON and raise and lower the snowplow several times. With the snowplow in the raised position, fully angle the plow from right to left several times. Activate the control FLOAT function and make sure the blade is lowered completely to the ground. Turn the control OFF.

### ⚠ CAUTION

Do not mix different types of hydraulic fluid. Some fluids are not compatible and may cause performance problems and product damage.

4. Remove the breather and check the fluid level. The fluid level should be 1-1/2"–2" below the fill hole. If additional fluid is needed, add hydraulic fluid rated to –40°F (–40°C), or other fluid conforming to Military Specification MIL-H-5606 A, such as Mobil Aero HFA or Shell AeroShell® Fluid.

**NOTE:** Loosen the breather slowly to relieve any pressure in the reservoir.

**NOTE:** Add fluid only when the blade is resting fully on the ground.

5. Replace and tighten the breather.

AeroShell® is a registered trademark (®) of Shell Oil Company.

# INSTALLATION INSTRUCTIONS – INSTALLING THE BLADE

## INSTALLING THE BLADE

### **⚠ WARNING**

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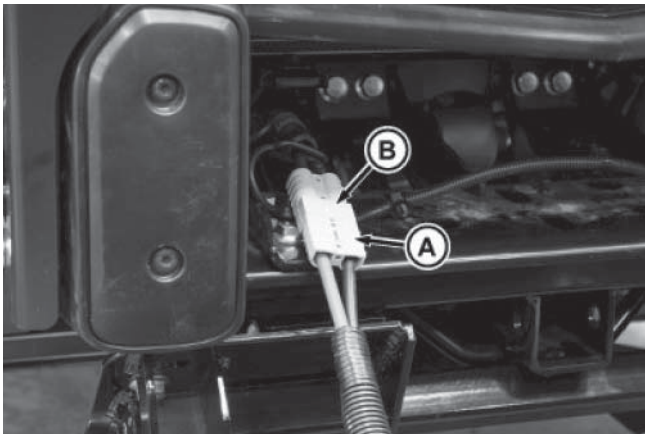
### **⚠ WARNING**

Keep hands and feet clear of the blade and A-frame/T-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.

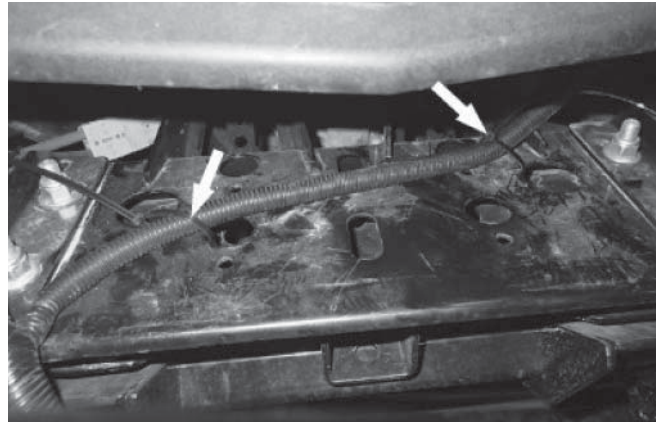
**NOTE:** For easier assembly and installation, vehicle and all snowplow components should be on a smooth, level, hard surface, such as concrete.

**NOTE:** To prevent corrosion on all connections, use dielectric grease.

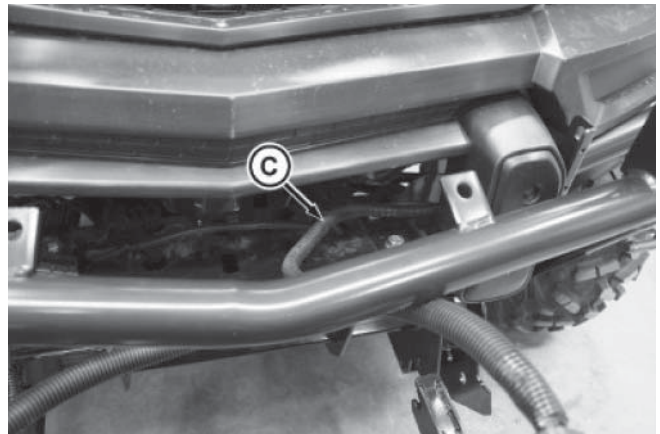
1. Remove the ignition key and put the vehicle in PARK or in gear to prevent others from starting the vehicle during installation.
2. Plug snowplow connector (A) into the mating connector (B) installed on vehicle.



3. Fasten the harness to the frame in two places with tie straps near the gray connector.

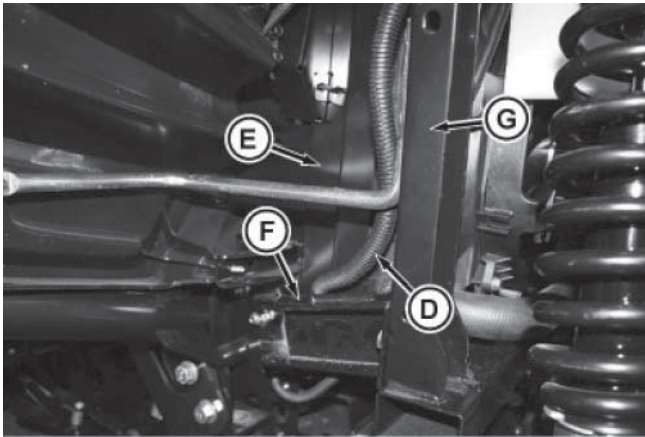


4. Route the power and data connectors of the plow harness (C) through the front and to the left side of the vehicle.

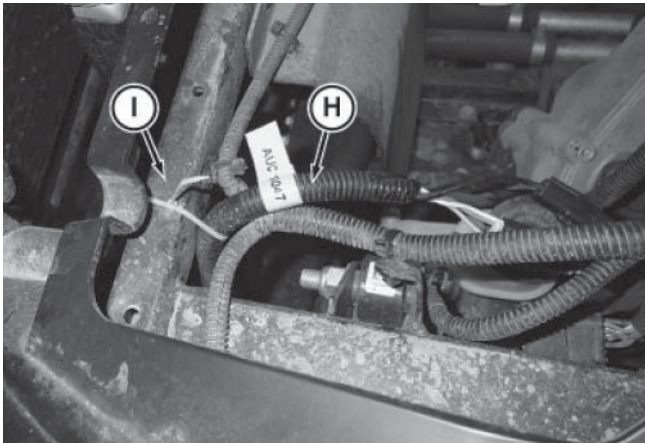


## INSTALLATION INSTRUCTIONS – INSTALLING THE BLADE

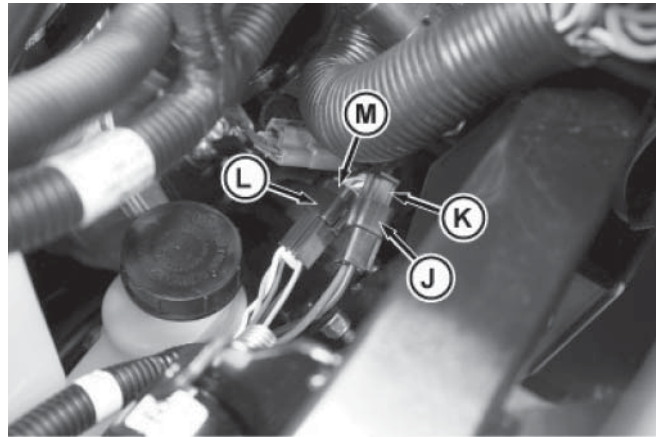
5. Feed harness (D) between the radiator (E) and frame rail (F).



6. Route harness up the frame post (G) and fasten in two places with tie straps.
7. Route harness (H) toward the vehicle load center and fasten harness to the core support (I) with a tie strap.



8. Connect female power connector (J) to mating connector (K) on vehicle harness.

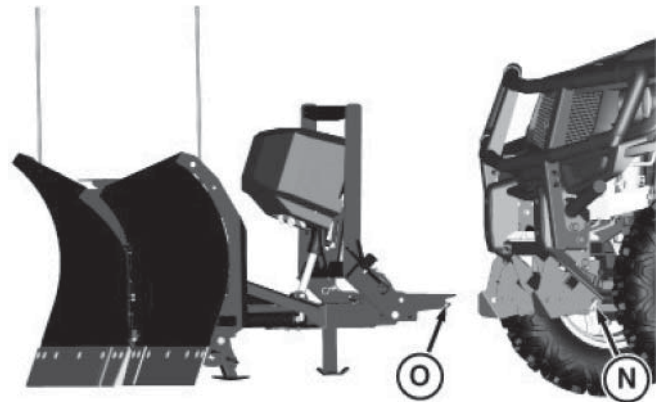


9. Connect female control connector (L) to mating connector (M) on vehicle harness. Fasten any unsecured parts of the harness to the frame with tie straps.
10. Turn the ignition switch to the "RUN" position.
11. Turn the control ON and activate FLOAT. (See "Joystick Control" in the Operating Your Snowplow section of the Owner's Manual.)

**NOTE: The blade must be in the 0° (straight) position when installing or removing the snowplow. (See Using the Joystick Control in Operating section.)**

12. To engage the rear receiver pins (N) into the headgear slots (O), drive the vehicle forward slowly.

**V-Plow shown.**



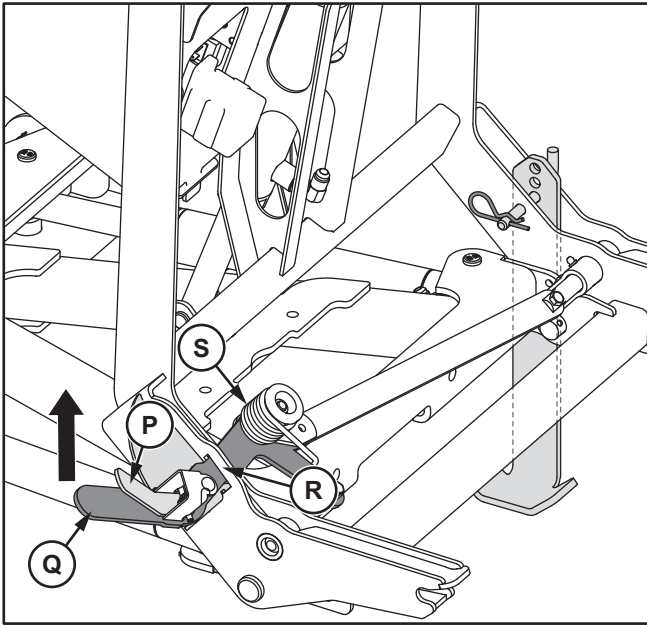


## INSTALLATION INSTRUCTIONS – INSTALLING THE BLADE

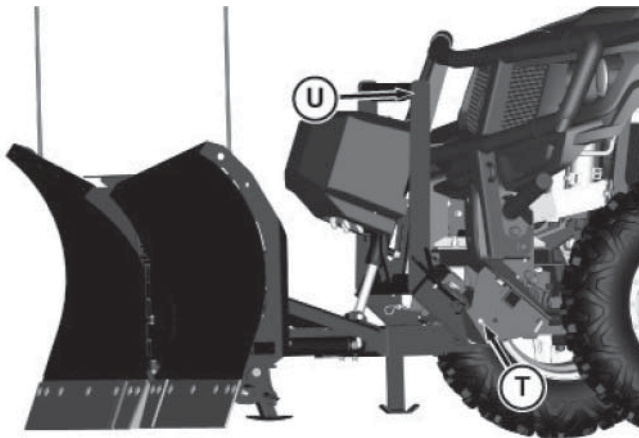
13. Lock the parking brake.

**NOTE: To aid in installing or removing, use lubricant on connecting pins.**

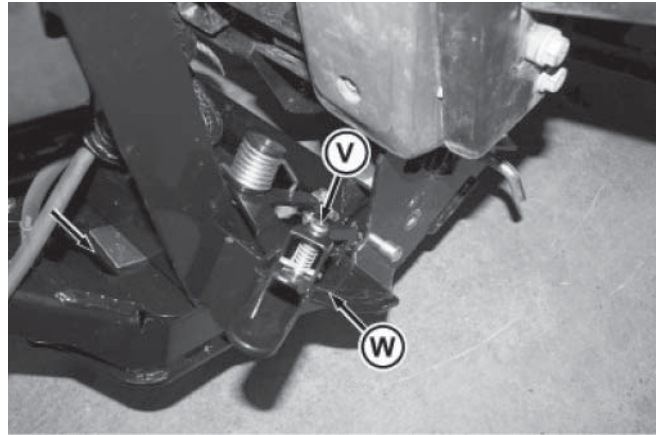
14. Hold down the lock lever (P) and move the handle (Q) out of the lock notch (R). Allow the spring (S) to move the handle forward.



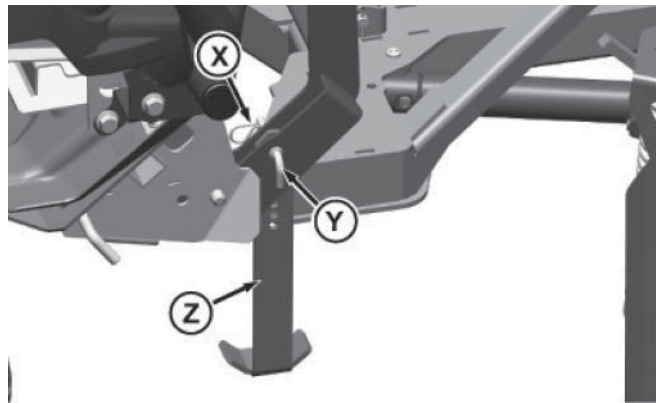
15. To allow the hitch pins (T) to engage the hitch pin holes, stand in the front of the blade and push the top of the headgear (U) toward the vehicle.



16. Make sure that the lock pin (V) is engaged in the forward hole in the lock pin bracket (W).



17. Remove spring locking pin (X) and pin (Y).



18. Remove stand (Z) from the slot in the headgear.

## OPERATIONAL TEST AND FINAL ADJUSTMENTS

### BLADE DROP SPEED ADJUSTMENT

#### **⚠ WARNING**

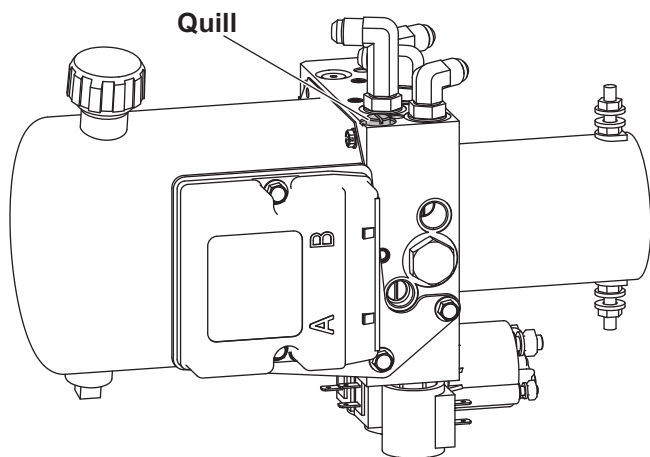
Keep 8' clear of the blade when it is being raised, lowered, or angled. Do not stand between vehicle and blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

The quill in the valve manifold adjusts the blade drop speed.

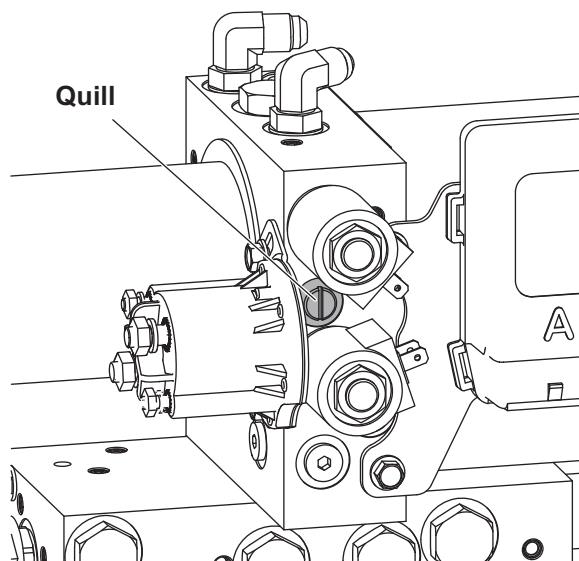
1. Lower the blade to the ground before making any adjustment.
2. Remove the hydraulic unit cover.

3. Turn the quill IN (clockwise) to decrease drop speed. Turn the quill OUT (counterclockwise) to increase drop speed.

**Straight Blade**



**V-Plow**



4. Stand 8 feet clear of the blade when checking adjustment.
5. Replace the cover.



## OPERATIONAL TEST AND FINAL ADJUSTMENTS

### FINAL INSPECTION AND ADJUSTMENT

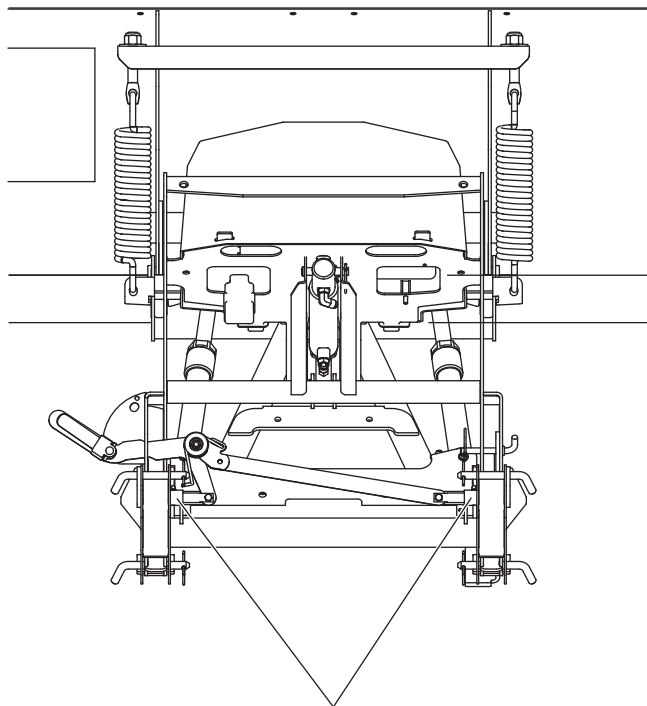
#### **⚠ WARNING**

Keep 8' clear of the blade when it is being raised, lowered, or angled. Do not stand between vehicle and blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

1. Fully angle the blade in both directions in raised and lowered positions. Adjust hose fittings, wraps, and clamps so hoses do not contact vehicle bumper, have no sharp bends, are wrapped at contact points, and do not become pinched between the headgear and A- or T-frame.

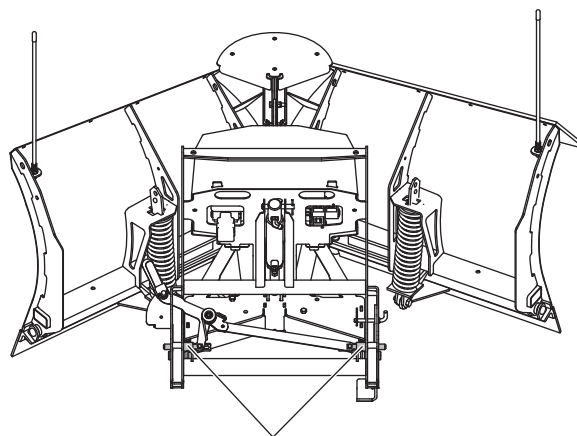
2. Add grease to the two hitch pins.

**Straight Blade**



**Use a good quality multipurpose grease.**

**V-Plow**

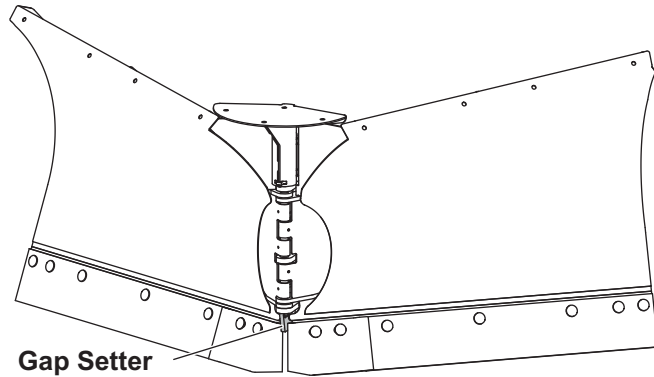


**Use a good quality multipurpose grease.**

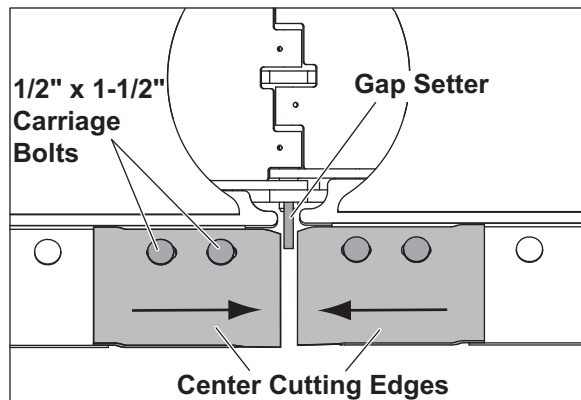
## OPERATIONAL TEST AND FINAL ADJUSTMENTS – V-PLOW

### Adjusting the Center Cutting Edges

The center cutting edge gap setter is located on the T-frame below the pivot pin hinge.



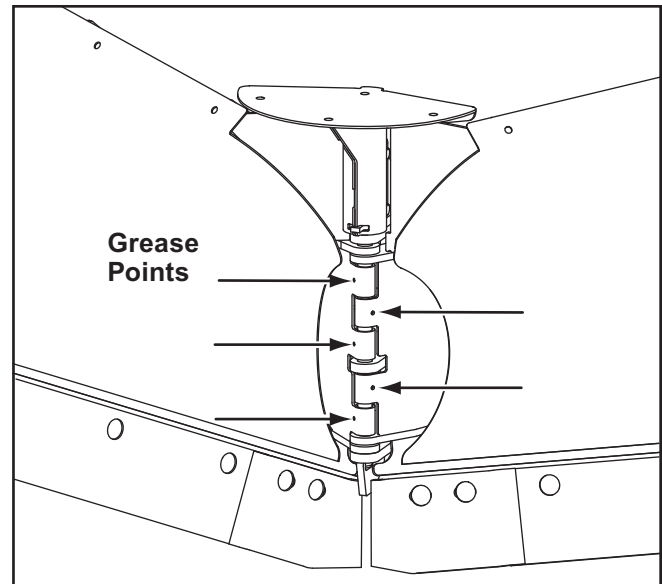
1. Place the blade wings in the vee position and check whether the center cutting edges touch the center cutting edge gap setter. If they do not touch the gap setter, adjust the center cutting edges as follows.
2. Loosen the four 1/2" x 1-1/2" center cutting edge carriage bolts, but do not remove them.
3. Slide the center cutting edges inward until they contact the gap setter.



4. Tighten the center cutting edge carriage bolts according to the torque chart.

### Lubricating the Pivot Pin Hinge

Using a rubber-tipped seal-off coupler fitting, apply a good quality multipurpose grease at the five grease points along the center hinge of the blade.



## FINAL ADJUSTMENTS

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### PLUG COVERS

#### CAUTION

**Plug covers shall be used whenever snowplow is disconnected. Vehicle battery cable is 12V unfused source.**

When the snowplow is removed from the vehicle, install plug covers on the vehicle battery cable. Insert the snowplow battery cable into the cable boot on the snowplow.

### OWNER'S MANUAL PACKET

If the completed snowplow will be delivered immediately, the Owner's Manual should be reviewed with and given to the purchaser according to the snowplow checklist.

If the snowplow is completed prior to delivery to the purchaser, attach the Owner's Manual packet to the electrical cable of the cab control for safekeeping.



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